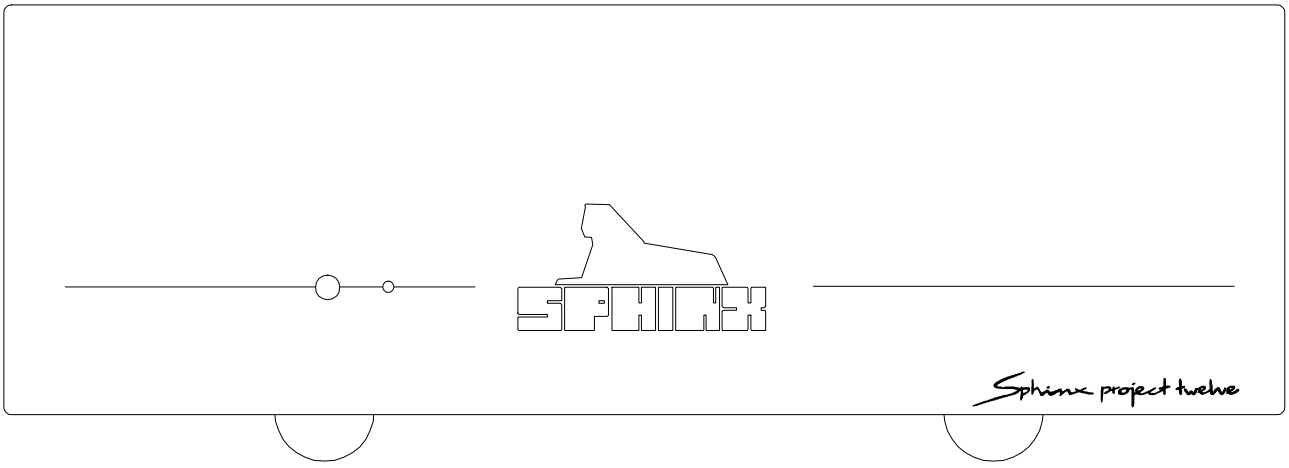
USER MANUAL

PROJECT TWELVE

MONO POWER AMPLIFIER



Congratulations on your purchase of the Sphinx Project Twelve!

You are now part of an ever-increasing group of quality-conscious audiophiles using Sphinx products.
We are very proud of the tradition connected with the SPHINX name, especially concerning audio quality perfection.
This manual will help you to gain a maximum amount of pleasure and quality from your new Sphinx Project Twelve.

The design is based on the long experience of the Sphinx design team with ultra-wide bandwidth power FET's.
These have an unique and extremely wide power bandwidth exceeding 1.5 MHz, a very high slew rate of over 100 V/µs and an unequalled perfect phase linearity over the complete frequency bandwidth.
The extremely low output impedance results in a damping factor of over 600!
Together with the very 'heavy' power supply and its large energy buffer of 26,920 µF, this results in an effortless sound with a very large dynamic range and an unsurpassed transient response.
Much attention has also been paid to the physical layout, the positioning of components and the internal grounding. This results in an equivalent input noise value of <1 µV (<-120 dBV): remarkable for a pre-amp, but really astounding for a big power amp with two transformers.

All of this means that the Project Twelve can work with all kind of loads from *every* loudspeaker: even the most difficult ones like electrostatic and magnetostatic.

To obtain the maximum quality from this power amp it is necessary to use it with top quality audio components preferably with other Sphinx components.

Please read this manual carefully before you install or use the Project Twelve. It is important to familiarise yourself with the special functions, operation and possibilities of the Sphinx Project Twelve.

Your local dealer will be able to answer any questions concerning other Sphinx audio components.

1. UNPACKING

Before leaving the factory every Project Twelve is subjected to stringent and extensive technical and exterior quality inspection.
This ensures you will enjoy many years of high quality audio from a perfect-looking product.

Attention: The power amp weighs over 6.5 kg (14.33Lb). Never lift it out of the box without someone helping you.

After unpacking your Project Twelve we therefore recommend you carefully check it for any transport damage.
In case of damage: please contact your Sphinx dealer immediately and retain all packing materials for possible proof of damage and possible claims.

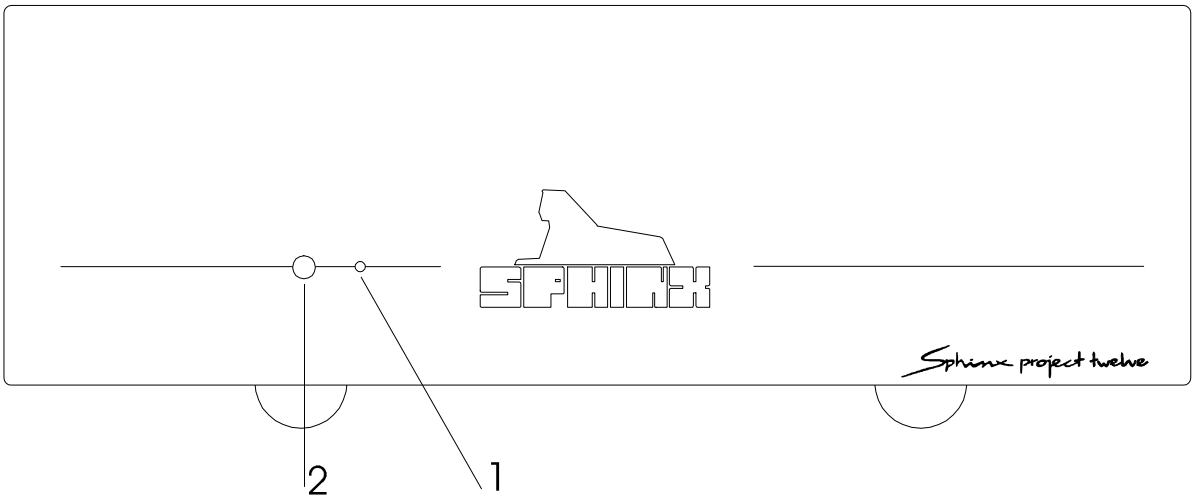
Even if the component is in perfect condition you should still keep the packing materials. If you need to transport your Project Twelve at a later time it will be best protected by the original packing materials.

2. SPHINX WARRANTY CARD

Please take this opportunity to fill out the enclosed warranty card now!
Follow the instructions on the card or consult your dealer.
Please send the card as soon as possible to the return address (within 14 days after purchase).

3. THE POWER AMP AT A GLANCE

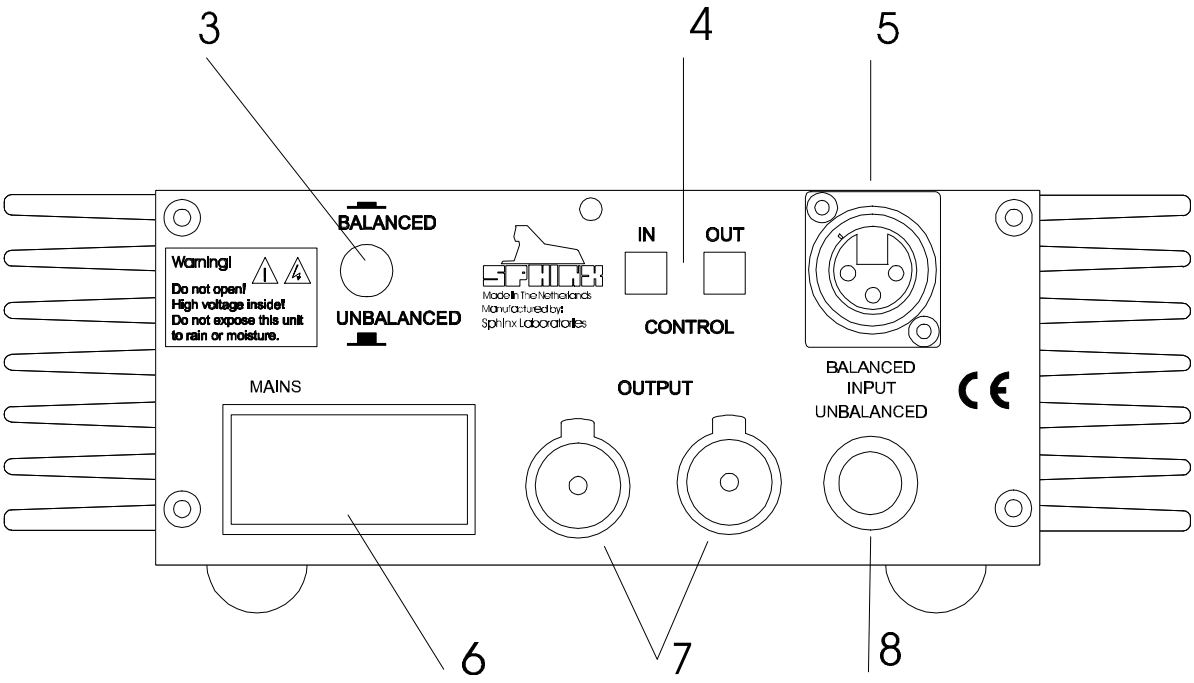
Front panel



1. **LED**: Indicates the selected function:
   stand-by red
   on green
   protection blinking red.

2. **STANDBY**: To switch the component on and off.

Rear panel



1. **BALANCED/UNBALANCED**: With this switch you may select the input (4.) to balanced (switch IN) or unbalanced.
2. **CONTROL IN:** To connect the optical cable from another Sphinx component like a pre-amp.
   CONTROL OUT: To connect the optical cable that goes to another Sphinx component.
3. **XLR input**: To connect the XLR cable from the pre-amp output.

4. **POWER:** This is the mains master switch.
   MAINS: To connect the power amp to a mains outlet (230 - 240 VAC).
5. **OUTPUT:** To connect the cable from the loudspeaker:
   red **+**
   white **-**
6. **Cinch:** To connect the cinch cable from the pre-amp output.

4. INSTALLATION AND CONNECTIONS

Installation

Make sure you place the Project Twelve on a stable and sturdy support, it weighs over 6.5 kg.

Never 'stack' two power amps on top of each other.

The Project Twelve will become warm, so correct placement is critical. Do *not* position it on top of or close to other heat-radiating equipment (such as other power amps) or in direct sunlight.

Please ensure unrestricted ventilation around the component.

If you need to use the amp in a closed cabinet or on a bookshelf, you should provide unrestricted ventilation around the component..

We recommend positioning each Project Twelve as close as possible to each loudspeaker.

To prevent any possible interference keep power supply cables away from all audio cables.

If all these conditions are met, the Project Twelve will perform to the extremely high standards it is designed for.

Connections in general

Before you start connecting equipment it is always wise to check whether all the mains cables of all components are disconnected from the mains outlets!
This will prevent any damage to the loudspeakers and amplifiers caused by incorrect wiring or settings.

Always use loudspeaker and audio cables and connectors of the highest quality.

Siltech SPO cable is used throughout internally and we recommend using this same cable for all external connections.
If you have the choice between longer loudspeaker cables or longer audio cables, choose the latter (cables between pre-amp and power amp will cause the least signal quality loss).

Connecting loudspeakers

We recommend using a double pair of cables, if this is possible with the loudspeaker (one pair for the highs and another for the lows).
In most cases you will hear a substantial improvement in the sound quality (but be careful to prevent shorted connections).
Your dealer can recommend the best cables and connection methods.

Connect the red OUTPUT terminal (6.) to the red or '+' terminal of the loudspeaker.
Connect the black OUTPUT terminal (6.) to the black or '—' terminal of the right loudspeaker.
When using unterminated cables please check carefully that there are no 'loose ends' to cause a short between the '+' and the '—' of the terminals on amp and loudspeaker!

Connecting the input

The balanced XLR input (5.) can be used to connect any balanced line level signal (such as from a pre-amp).
The balanced signal cable is the best and preferred connection method.
Be sure to connect it properly though.
The unbalanced cinch input (8.) can be used to connect any unbalanced line level signal (such as from a pre-amp).
Be sure to connect it properly though.

When making the connections please refer to the descriptions for parts 2. to 8. on page 5.

Connecting the optical cables

The Project Twelve has an optical jack connector for CONTROL IN en OUT (3.).

When the CONTROL IN of the Project Twelve is connected to the CONTROL OUT of another Sphinx component, you don't have to switch the Project Twelve with POWER switch (5.). The power amp will automatically select Stand-by mode as soon as the other component is set to stand-by.

If you connect the CONTROL OUT of the Project Twelve with the CONTROL IN of another Sphinx component (usually another power amp), this will also automatically be selected to stand-by as soon as the Project Twelve is set to stand-by.

In 'stand-by' mode the bias current of the power amp is set to a lower level, which drastically decreases the temperature and power consumption. Additionally it significantly increases the life span of the component.
The power amp also warms up more quickly so you will be able to enjoy maximum performance without significant delay.

Ensure proper connection of the optical cables (from CONTROL OUT to CONTROL IN), otherwise the LED on the front panel may remain green even though the stand-by mode is activated.

If the Project Twelve is placed in strong direct sunlight and you do not use an optical connection the stand-by mode may self-activate. In that case you should place the supplied dummy connector in the CONTROL IN jack (but only if this is not being used).

We strongly recommend against placing the component in direct sunlight.

Connecting the mains cable

Before you connect the cable please check whether the mains voltage indicated on the manufacturer's label on the rear panel is the same as your local mains voltage.
If not: please contact your dealer and do not connect the component to the mains.

Connect the mains cable after you have connected all other components in the system and have double-checked all connections.

If you use more than one Project Twelve you should connect them all to the same mains outlet and phase.

5. OPERATION

Connect the mains cable of the Project Twelve to a mains outlet.

Once you have connected all other components, you should check again whether the audio and optical connections to the pre-amp (if any) are properly made.
Then you may switch the Project Twelve on with the POWER switch (5.) on the rear panel.

N.B.: If there is no optical cable connected to the CONTROL IN jack (3.), you should cover this input with the supplied dummy connector. Or else strong light (from sun or lamp) may prevent the Project Twelve from switching-on.

From now on you should switch the power amp on and off with the STANDBY button of another Sphinx component connected to the optical CONTROL IN jack (usually the pre-amp).
This way all circuits will remain at working temperature and the audio quality will be 100% within 30 minutes after activating. Additionally it considerably increases the life span of the component.

The Project Twelve is in stand-by mode and the LED (1.) shows a red indication.

Power On

Switch the Project Twelve on with the STANDBY button of the other Sphinx component: the red LED slowly blinks and after a short period changes to green.

If you activate the power amp for the first time or after a long period of non-use with the power 'off', the amp will be at maximum performance after one hour. From stand-by mode it takes only around 30 minutes.

Power off

Switch the Project Twelve off (stand-by) with the STANDBY button of the other Sphinx component. The LED changes from green to red.

N.B.: If you need to switch the system on again immediately, you should wait for at least 60 sec though.
Because switching on the amp within 30 sec will activate the protection circuits: the red LED will blink rapidly.

Only if you will not be using the amp for a long period (e.g. during holidays) should you switch the amp off with the POWER switch (5.).
In stand-by mode the Project Twelve's power consumption is around the 5 W mark.

Warnings

1. Never place two amps on top of each other.
2. The component should not be subjected to moisture or fluids.
3. Do not touch the component and the loudspeaker outputs especially not with moist hands: this powerful amp can output voltages in excess of 36 volt.
4. Before removing the top panel, you should disconnect the mains cable and wait at least 30 minutes (because the power supply remains at the maximum voltage for a long time). Removing the top panel will void your warranty: the panel should therefore only be removed by an official Sphinx service engineer!
5. Before disconnecting a loudspeaker or audio cable, please switch of the component with the POWER switch (5.)
6. An AC extension cord should never be used wholly or partly coiled: this poses a severe fire risk!

Encountering problems...

The Project Twelve has extensive protection circuits. These will activate when:

- the temperature exceeds the limit (>70 °C),
- the output has an Offset voltage (>+/-350 mV),
- the output is shorted (current limit) or
- there is no power supply voltage.

If, after power on, the protection circuits detect something wrong the Project Twelve will immediately switch to stand-by: the red LED indication will blink rapidly.

In almost all cases the problem will be with the loudspeaker cables.
Check them all and solve the problem.
If you can't find the problem or the cause is definitely not the cables, please contact your Sphinx dealer.

Should for some reason the mains fuse be blown, you should replace it with a new one of exactly the same type and rating:

5x20 mm
250 VAC / 3.15 A / slow

The fuse (7.) is located at the rear panel next to the mains connector (8.).

Never use a fuse of a different rating: this could lead to serious damage and may cause fire!

6. CARE AND MAINTENANCE

Clean the exterior with a soft, lint-free, anti-static cloth. Do not use force while wiping the surface. To remove difficult stains use a few drops of detergent on a moist cloth, sweep carefully and wipe dry afterwards.

If some scratching occurs, please consult your Sphinx dealer first. He can give you advice about possible solutions.

Do not use polishing or cleaning agents: they may damage the sensitive acrylic finish of the Project Twelve.

Do not use aerosol cleaning agents.
Most contain solvents which might react with and damage the acrylic finish.

7. TECHNICAL SPECIFICATIONS

Bandwidth	0 - 1.5 MHz (+0/-3 dB) 0 - 203,000 Hz after RF input filter
Phase response error	<1° (0 - 20,000 Hz)
Gain	
Balanced	29.5 dB max. (x 29.9)
Unbalanced	29.5 dB max. (x 29.9)
Minimum Power Output (1 - 20,000 Hz)	>151 W into 8 ohm (21.8 dBW), THD<0.01% >246 W into 4 ohm (23.9 dBW), THD<0.01% >340 W into 2 ohm (25.3 dBW), THD<0.01%
Output voltage / current, max.	36 V / 16 A
THD+N (IHF-A)	<0.008% (100 W into 8 ohm, 1 - 20,000 Hz)
IMD	<0.010% (70 W into 8 ohm)
S/N ratio (IHF-A)	>120 Db
Slew rate	>100 V/µs
Damping factor	>600 (1 - 1,000 Hz)
Input	XLR balanced / Cinch unbalanced
Level, nominal	1.25 V (1.9 dBV) / 1.25 V (1.9 dBV)
Impedance	600 ohm / 20 kohm
Supply capacitance	26.920 µF total
Power consumption	600 W max. (5 W standby)
Dimensions (h x w x d)	68 x 250 x 340 mm
Weight	6.5 kg / 14.33Lb

This unit conforms to the EMC interference regulations issued by the EU and to the CE standards.
This unit complies with safety regulation VDE 0860 and therefore with international safety regulation IEC 65.

Technical specifications may be changed by SPHINX without prior notice if technical developments make this necessary.